Response of MidAmerican Energy Company
to the
Department of Energy's "Questions for Stakeholders"

Energy Policy Act of 2005, Section 1234
Economic Dispatch Study

Please direct questions to:

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Questions

1. What are the procedures now used in your region for economic dispatch? Who is performing the dispatch (a utility, an ISO or RTO, or other) and over how large an area (geographic scope, MW load, MW generation resources, number of retail customers within the dispatch area)?

MidAmerican Energy Company (MidAmerican) currently performs economic dispatch for its own native load. By way of joint dispatch agreements, certain other entities within its control area are also included in the overall economic dispatch function.

MidAmerican's control area is primarily located in Iowa, but includes the Quad Cities area of Illinois and extreme southeast South Dakota. The dispatch for native load as of September 1, 2005 involves approximately:

4100 MW peak demand
18 million MWh annual energy
4800 MW owned generation
700,000 retail native load customers

In summary, MidAmerican and its joint dispatch customers achieve economic dispatch by

- developing a day-ahead forecast for hourly load to be dispatched;

- arranging day-ahead purchases, sales, and / or demand response participation to maximize economy;
- committing adequate generating capacity to serve the resulting generation requirements;
- in real time, dispatching MidAmerican generation and purchases to economically balance the requirements of MidAmerican and its joint dispatch customers; and
- maximizing system economics by arranging next-hour purchases and sales.

This economic dispatch, on both a day-ahead and real-time basis, respects operational constraints on both the generation and transmission systems.

2. Is the Act's definition of economic dispatch appropriate? Over what geographic scale or area should economic dispatch be practiced? Besides cost and reliability, are there any other factors or considerations that should be considered in economic dispatch, and why?

Section 1234 of the Energy Policy Act defines economic dispatch as

> the operation of generation facilities to produce energy at the lowest cost to reliably serve customers, recognizing any operational limits of generation and transmission facilities.

This definition is generally adequate, although it is necessary to recognize that "operational limits" involve not only physical constraints but also any regulatory restrictions. Thus economic dispatch must consider not only cost and reliability, but also compliance with environmental standards, noise abatement restrictions, other state and federal regulations, etc.

MidAmerican's experience is that economic dispatch is already carried out over large geographic areas by virtue of active trading markets and extensive bilateral transactions. This economic dispatch is generally limited by physical system constraints rather than by geography or political divisions.

3. How do economic dispatch procedures differ for different classes of generation, including utility-owned versus non-utility generation? Do actual operational practices differ from the formal procedures required under tariff or federal or state rules, or from the economic dispatch definition above? If there is a difference, please indicate what the difference is, how often this occurs, and its impacts upon non-utility generation and upon retail electricity users. If you have specific analyses or studies that document your position, please provide them.

There is no fundamental difference in the way that MidAmerican dispatches different classes of generation; all classes are operated to minimize costs subject to reliability standards, operational constraints, and contractual arrangements with counterparties. MidAmerican actively secures economic purchases from a variety of entities, including non-utility generation. Its actual practices are prescribed in its tariffs and conform to federal and state regulation. In addition, MidAmerican has joint dispatch agreements with various entities within the boundary of its control area which permit direct control and dispatch of those entities' resources.

4. **What changes in economic dispatch procedures would lead to more non-utility generator dispatch? If you think that changes are needed to current economic dispatch procedures in your area to better enable economic dispatch participation by non-utility generators, please explain the changes you recommend.**

MidAmerican is not aware of changes in its economic dispatch procedures that would lead to more non-utility generator operation. It is typically the terms and conditions of the power purchase agreements with non-utility generators, other than price, that determine how non-utility generation is dispatched. MidAmerican actively seeks quotations from, and has provisions in some cases to provide market-based bid and offer prices to, non-utility generators on both a short-term and long-term basis, resulting in non-utility generation operation that is already economic.

5. **If economic dispatch causes greater dispatch and use of non-utility generation, what effects might this have – on the grid, on the mix of energy and capacity available to retail customers, to energy prices and costs, to environmental emissions, or other impacts? How would this affect retail customers in particular states or nationwide? If you have specific analyses to support your position, please provide them to us.**

Currently, MidAmerican utilizes economic dispatch within its control area as defined in the statute. MidAmerican believes that non-utility generation is already utilized to the fullest economic extent, consistent with operating constraints, regulation, and contractual arrangements.

Looking beyond the MidAmerican system to economic dispatch in general, MidAmerican would not expect greater use of economic dispatch to have significant impacts on the grid, energy mix, prices, or emissions:

- Since economic dispatch, by its statutory definition, must recognize "any operational limits of generation and transmission facilities," there should be little effect on the grid if economic dispatch causes greater use of non-utility generation. Of course,

those operational limits may limit the extent to which greater economic dispatch can be achieved. MidAmerican's experience is that utilities, non-utility generators, marketers, and other market participants are already aggressive in maximizing economic dispatch within operational limits.

- A disproportionate amount of non-utility generation is gas-fired. However, MidAmerican would not expect an increase in the use of non-utility generation to result in a significant change in the usage of natural gas. Any economic gas-fired non-utility generation is likely to displace other gas-fired generation, resulting in little overall change in fuel usage. The incremental cost of nuclear or coal-fired plants is typically less than the incremental cost of the most efficient gas-fired plants, and non-utility gas-fired generation therefore competes with generation that also operates on natural gas.

- Greater use of economic dispatch would, by its very definition, result in reduced energy costs to utilities. However, as noted above, MidAmerican believes that economic dispatch is already in wide use. MidAmerican does not believe that significant reductions in cost are likely to be achieved by incremental increases in the scope of economic dispatch.

- Finally, since MidAmerican understands the definition of "economic dispatch" to include compliance with environmental regulations, MidAmerican would not anticipate significant changes in emissions to accompany broader use of economic dispatch.

6. Could there be any implications for grid reliability – positive or negative – from greater use of economic dispatch? If so, how should economic dispatch be modified or enhanced to protect reliability?

Since greater use of economic dispatch, by definition, must recognize the operational limits of the transmission system and must *reliably* serve customers, greater use of economic dispatch should have little effect on overall grid reliability as long as all market participants are held accountable to consistent reliability standards and are properly monitored by a regional reliability authority.